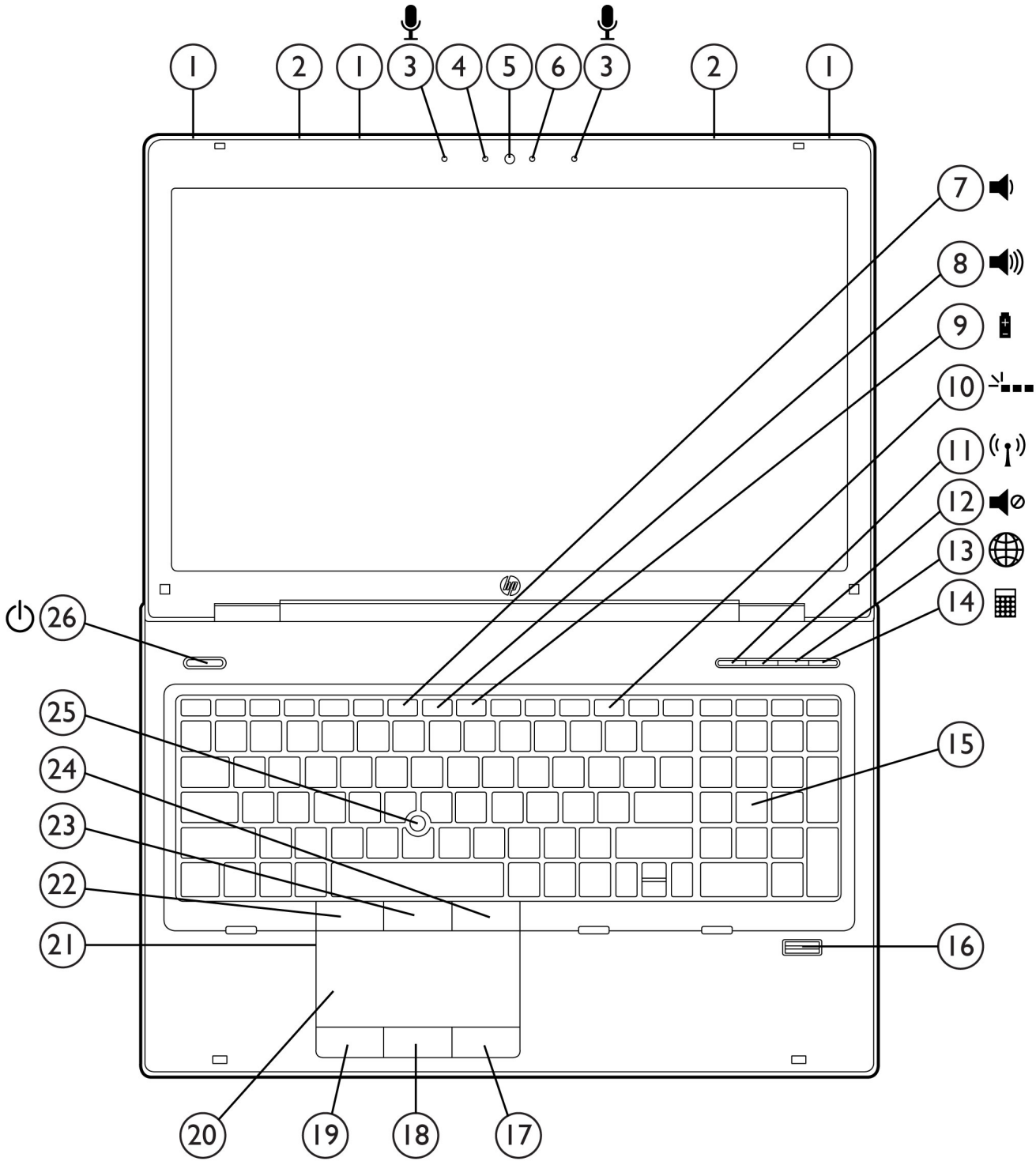
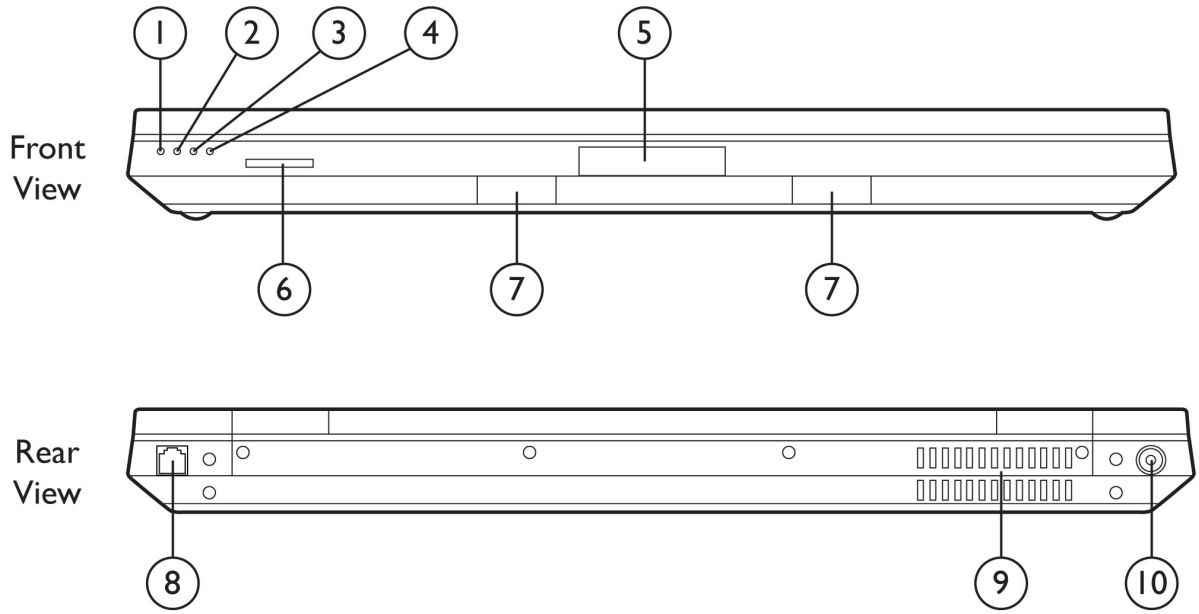



1. WLAN antennas (3)
10. Optional backlit keyboard function key
18. Center Touchpad button

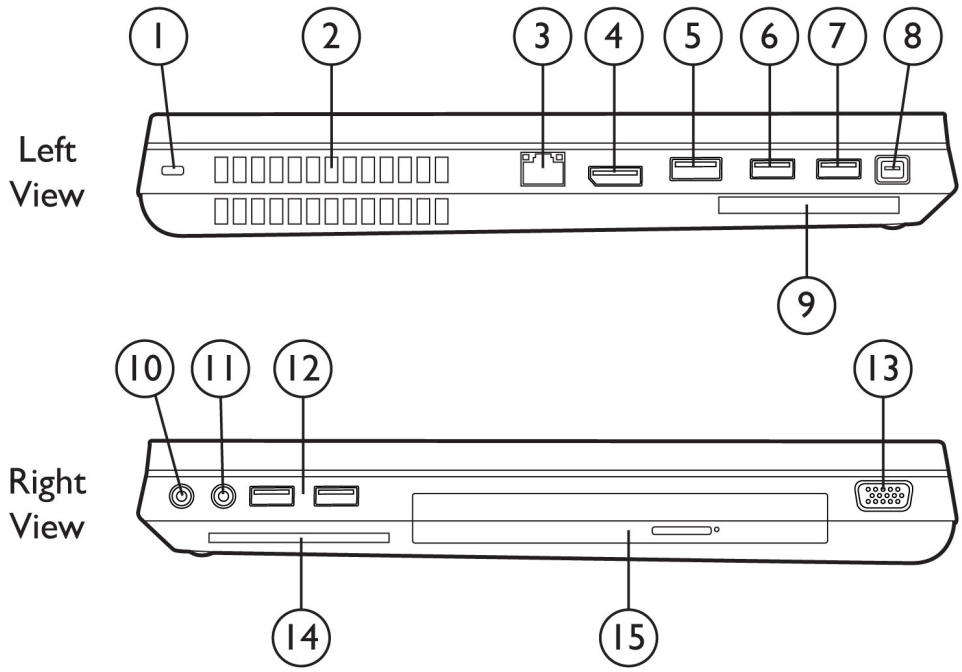
*Overview*

2. WWAN antennas (2)
3. Dual-microphone array
4. Webcam light (with webcam)
5. Optional 720p HD webcam
6. Ambient Light Sensor
7. Volume down function key
8. Volume up function key
9. HP Power Assistant function key
11. Wireless on/off button with LED indicator
12. Volume mute button with LED indicator
13. HP QuickWeb button with LED indicator
14. Calculator button with LED indicator
15. Numeric keypad
16. HP Fingerprint Sensor
17. Right Touchpad button
19. Left Touchpad button
20. Touchpad with scroll zone
21. Touchpad on/off button with LED
22. Left Pointstick button
23. Center Pointstick button
24. Right Pointstick button
25. Pointstick
26. Power button with LED indicator




1. Wireless LED indicator
2. Power/standby LED indicator
3. Battery charging LED indicator
4. HDD/ODD activity / HP 3D DriveGuard LED indicator
5. Display release latch
6. Secure Digital/MMC slot
7. Stereo speakers
8. RJ-11/modem port
9. Vent
10. Power connector

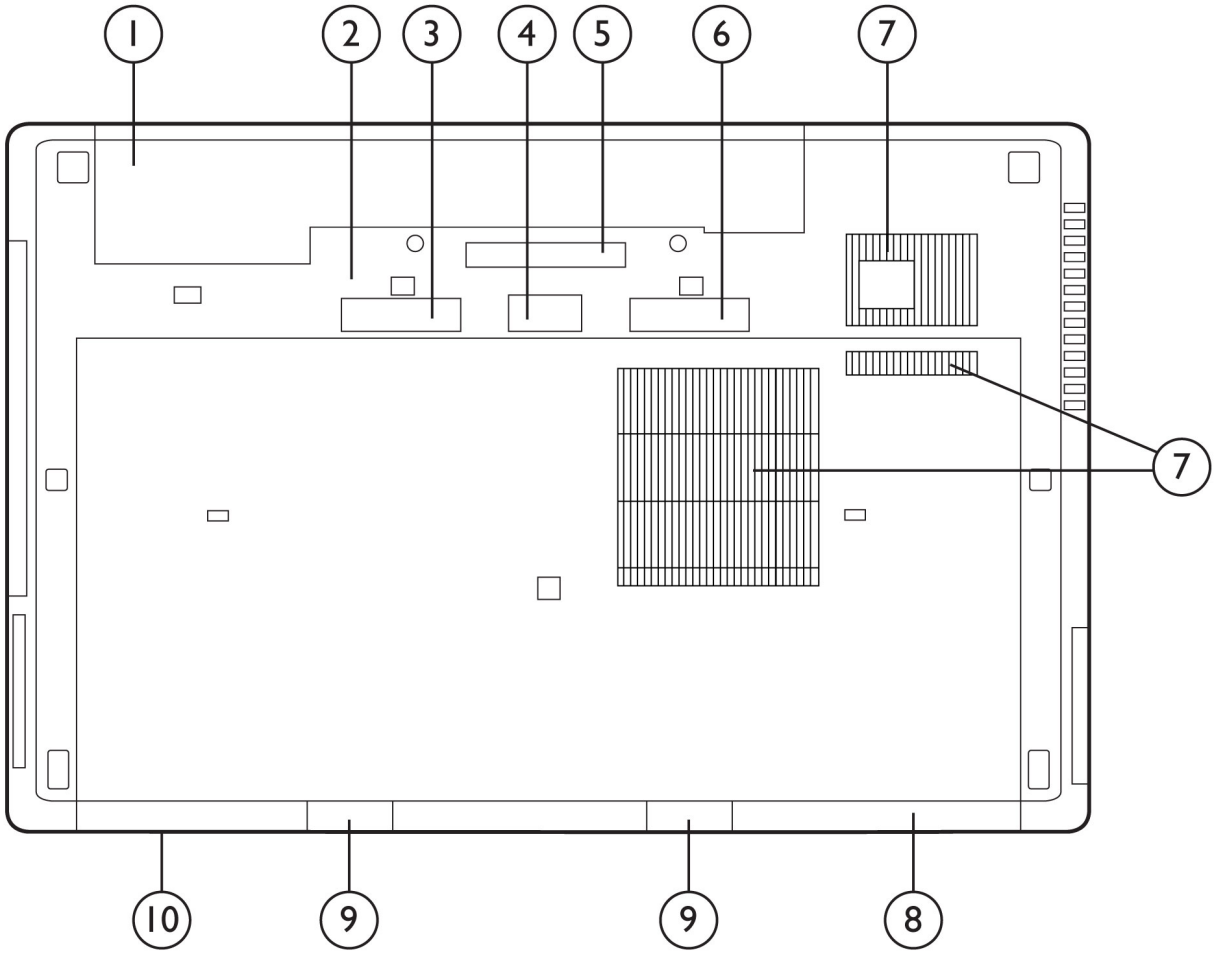
*Overview*




1. Security lock slot
2. Vents
3. RJ-45/Ethernet port
4. DisplayPort
5. eSATA/USB 2.0 combo port
6. USB 3.0 port
7. USB 3.0 port
8. 1394a port
9. ExpressCard/54 slot
10. Stereo headphone/line out
11. Stereo microphone/line in
12. (2) USB 2.0 ports (charging port on the left)
13. VGA/external monitor connector
14. Smart Card Reader
15. Upgrade Bay (optical drive or additional hard drive)

*Overview*

Bottom View




1. Battery bay
2. SIM slot* for WWAN (select models)
3. Battery release latch
4. Secondary battery connector
5. Docking connector
6. Bottom cover release latch
7. Vents and spill-resistant keyboard drain hole
8. Bluetooth module compartment
9. Stereo Speakers
10. Hard drive, memory, and wireless compartments under bottom cover

* SIM slot is accessed through battery bay.

*Overview*

## At A Glance

- Genuine Windows 7 versions or FreeDOS
- All new chiseled design with enhanced DuraCase, wear-resistant DuraFinish, HP DisplaySafe frame, precision aluminum-alloy hinges, cast titanium-alloy display latches, signature gunmetal color tone, keyboard in full aluminum deck, radial-spun display cover with HP backlit logo, and chemically strengthened glass touchpad
- Designed to meet the military standard MIL-STD-810G for vibration, dust, altitude, and high- and low-temperature operation
- Workstation-caliber discrete graphics: AMD FirePro M5950, NVIDIA Quadro 3000M, NVIDIA Quadro 4000M, or NVIDIA Quadro 5010M (availability planned for June 2011)
- ISV certified to provide fast and reliable performance with workstation applications, including manipulation of 3D textures
- AMD Eyefinity Technology for multi-monitor support on models configured with AMD graphics
- DisplayPort for high resolution support
- Widescreen 17.3-inch diagonal LED-backlit display:
  HD+ wide viewing angle, FHD wide viewing angle, or FHD ultra wide viewing angle with HP DreamColor
- HP Mobile Display Assistant software for in-depth control of all the color attributes of HP DreamColor models
- HP Performance Advisor for optimal configuration, compatibility and performance
- Up to four SODIMMs on configurations with quad-core processor, for system memory up to 32 GB
- SRS Premium Sound optimized for high fidelity audio
- Choice of 2nd generation Intel® Core™ i7 and i5 processors
- Intel Core i7 with vPro and Core i5 with vPro technology (optional)
- Flexible wireless connectivity options:
  - Optional integrated HP hs2340 HSPA+ Mobile Broadband Module connects to both HSPA and HSPA+ (UMTS) networks and provides GPS functionality
  - Optional integrated HP un2430 EV-DO/HSPA Mobile Broadband Module (Gobi 3000) provides GPS functionality (availability expected May, 2011)
  - Integrated Intel Centrino® 802.11 a/b/g/n 3x3 or Atheros 802.11 a/b/g/n 3x3 wireless LAN module
  - Bluetooth® v2.1+EDR
  - HP Connection Manager 4.0
- Security features including HP ProtectTools, with central management across HP and non-HP client PCs
- HP QuickWeb for convenient online access without long boot-up times
- HP DayStarter for display of calendar information during Windows startup
- HP Power Assistant allows you to conserve power, stretch battery run-time, accurately monitor the energy usage of the PC and up to four select HP external monitors, and report workforce power consumption.
- Primary storage bay and optional second primary storage bay
  - Each with choice of 7200 rpm user-removable hard drive up to 750 GB with HP 3D DriveGuard protection, or 128/256 GB Solid State Drive
- Upgrade Bay for optical drive, optional additional hard drive, or weight saver
- Choice of battery solutions: 8-cell (83 WHr) or 8-cell (75 WHr) HP Long Life Battery
- BFR/PVC-free*, ENERGY STAR qualified and EPEAT Gold registered in the U.S. EPEAT status varies by country- please see epeat.net.

* Meeting the industry definition of 'BFR/PVC-free' per the iNEMI Position Statement on "Low Halogen" Electronics. Plastic parts incorporated into the chassis generally contain < 1000 ppm (0.1%) of bromine or chlorine. Printed circuit board and substrate laminates generally contain < 1500 ppm (0.15%) of total bromine and chlorine. Service parts after purchase may not be BFR/PVC-free. External accessories, including power supplies, power cords, and peripherals as well as the following customer-configurable internal components: ATT SIM card and DreamColor displays are not BFR/PVC-free.

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| Processors | 2nd Generation Intel Core i7 Processors | |
| | Intel Core i7-2920XM Processor (2.50 GHz, 8 MB L3 cache, 4 cores/8 threads, 55W)* Up to 3.50 GHz with Intel Turbo Boost Technology. Supports a maximum of 32 GB system memory. | |
| | Intel Core i7-2820QM Processor (2.30 GHz, 8 MB L3 cache, 4 cores/8 threads, 45W)* Up to 3.40 GHz with Intel Turbo Boost Technology. Supports a maximum of 32 GB system memory. | |
| | Intel Core i7-2720QM Processor (2.20 GHz, 6 MB L3 cache, 4 cores/8 threads, 45W)* Up to 3.30 GHz with Intel Turbo Boost Technology. Supports a maximum of 32 GB system memory. | |
| | Intel Core i7-2630QM Processor (2.00 GHz, 6 MB L3 cache, 4 cores/8 threads, 45W)* † Up to 2.90 GHz with Intel Turbo Boost Technology. Supports a maximum of 32 GB system memory. | |
| | Intel Core i7-2620M Processor (2.70 GHz, 4 MB L3 cache, 2 cores/4 threads, 35W)* Up to 3.40 GHz with Intel Turbo Boost Technology. Supports a maximum of 8 GB system memory. | |
| | 2nd Generation Intel Core i5 Processors | |
| | Intel Core i5-2540M Processor (2.60 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)* Up to 3.30 GHz with Intel Turbo Boost Technology. Supports a maximum of 16 GB system memory. | |
| | Intel Core i5-2520M Processor (2.50 GHz, 3 MB L3 cache, 2 cores/4 threads, 35W)* Up to 3.20 GHz with Intel Turbo Boost Technology. Supports a maximum of 16 GB system memory. | |
| | * Intel's numbering is not a measurement of higher performance.<br>† Not available with vPro.<br>NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode. | |
| Operating System | Preinstalled | Genuine Windows 7 Professional 64*<br>Genuine Windows 7 Home Premium* (limited localizations)<br>FreeDOS |
| | Supported | Genuine Windows 7 Enterprise 32*<br>Genuine Windows 7 Enterprise 64*<br>Genuine Windows 7 Ultimate 32*<br>Genuine Windows 7 Ultimate 64*<br>Genuine Windows Vista Enterprise 32**<br>Genuine Windows Vista Enterprise 64**<br>Genuine Windows Vista Business 32**<br>Genuine Windows Vista Business 64**<br>Genuine Windows XP Professional 32<br>Genuine Windows XP Professional 64 |
| | Certified | SuSE Linux Enterprise Desktop 11 |
| | * System may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See http://www.microsoft.com/windows/windows-7/ for details.<br><br>** Certain Windows Vista product features require advanced or additional hardware. See: http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit: http://www.windowsvista.com/upgradeadvisor. | |

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| Chipset | | Mobile Intel QM67 Express Chipset |
| Intel Core i5 with vPro/Core i7 with vPro technology capable | | Intel Core i5 with vPro and Core i7 with vPro technology is a selectable feature that is available on units configured with select processors, an Intel Centrino® Advanced-N or Ultimate-N WLAN module and a preinstalled Windows operating system. It provides advances in remote manageability, security, energy efficient performance, and wireless connectivity. Intel Active Management Technology 7.0 (iAMT) offers built-in manageability and proactive security for networked notebook PCs, even when they are powered off* or when the operating system is inoperable. It can help identify threats before they reach the network, isolate infected systems, and update PCs regardless of their power state.<br>*Requires a Windows operating system, network hardware and software, connection with a power source, and a direct (non-VPN) corporate network connection which is either cable or wireless LAN.<br><br>NOTE: Some functionality of Intel Core i5 with vPro/Core i7 with vPro technology, such as Intel Active Management technology and Intel Virtualization technology, requires additional third- party software in order to run. Availability of future "virtual appliances" applications for Intel Core i5 with vPro/Core i7 with vPro technology is dependent on third- party software providers. Compatibility with future "virtual appliances" is yet to be determined. |
| Graphics | | AMD FirePro M5950 with 1 GB dedicated GDDR5 video memory<br>Microsoft DirectX 11 (Shader Model 5.0) and OpenGL 4.0 capable<br>AMD Eyefinity Technology supports up to five independent displays when using an HP Advanced Docking station<br><br>NVIDIA Quadro 3000M with 2 GB dedicated GDDR5 video memory<br>Microsoft DirectX 11 (Shader Model 5.0) and OpenGL 4.0 capable<br>NVIDIA Quadro 4000M with 2 GB dedicated GDDR5 video memory<br>Microsoft DirectX 11 (Shader Model 5.0) and OpenGL 4.0 capable<br>NVIDIA Quadro 5010M with 4 GB dedicated GDDR5 video memory<br>Microsoft DirectX 11 (Shader Model 5.0) and OpenGL 4.0 capable |
| Display | Internal | 17.3-inch diagonal LED-backlit HD+ WVA anti-glare (1600 x 900 resolution)<br>17.3-inch diagonal LED-backlit FHD WVA anti-glare (1920 x 1080 resolution)<br>17.3-inch diagonal LED-backlit FHD UWVA anti-glare DreamColor* (1920 x 1080 resolution)<br>Ambient Light Sensor<br>Optional HP Privacy Filter<br>* HP EliteBook 8760w Mobile Workstations with DreamColor technology are not available with HP Mobile Broadband. |
| | External | Up to 32-bit per pixel color depth<br>DisplayPort supports resolutions up to 2560 x 1600, 30-bit color depth at 60 Hz, and full HD (1920 x 1080) monitors, 24-bit color depth at 120 Hz<br>VGA port supports resolutions up to 2048 x 1536 at 75 Hz, and lower resolutions at up to 100 Hz<br>DVI-D (single link) video signal available through DVI port in optional HP Docking Station (sold separately)<br>supports resolutions up to 1600 x 1200 at both full and reduced |

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| | | blanking, and 1920 x 1200 at reduced blanking<br>NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings. |
| Memory | Standard | DDR3 PC3-10600 SDRAM (1333 MHz)<br>Two or four SODIMM slots supporting dual-channel memory<br>2 GB, 4 GB, and 8 GB SODIMMs<br>NOTE: Four memory slots only on models with quad-core processor. |
| | Maximum | Upgradeable to 32 GB with (4) 8 GB SODIMMs |
| | Dual-channel | Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots. |
| | NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. Full availability of 4 GB or more of memory requires a Windows 64-bit operating system or Linux. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements. | |
| Communications | Integrated Intel 82579LM Gigabit* Network Connection<br>56K V.92 modem**<br>* The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.<br>** Designed for downloads from 56K modem compliant sources. Maximum achievable download transmission rates currently do not reach 56 KB/s, and will vary with line conditions. Modem availability is subject to country regulatory approval. | |
| Wireless Devices | Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Broadband Wireless (WWAN) requires a Windows operating system and is available in select countries as a standard, factory configurable feature or an after market option. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options. | |
| | Mobile Broadband options | Two 850/900/1575/1700/1800/1900/2100 MHz antennas integrated in the top of the display panel support current and future WWAN technologies.<br>NOTE: Separately purchased mobile network operator service is required. |
| | HP hs2340 HSPA+ Mobile Broadband Module | Integrated mobile broadband module that provides connectivity to both HSPA and HSPA+ (UMTS) networks. It also provides standalone, Internet and network assisted GPS functionality for various mapping applications and security applications such as Computrace Pro for HP ProtectTools. |
| | HP un2430 EV-DO/HSPA Mobile Broadband Module | Integrated mobile broadband module with Gobi global mobile Internet technology that provides connectivity to both CDMA (EVDO) and UMTS (HSPA) networks. It also provides GPS functionality for various mapping applications and security applications such as Computrace Pro Premium for HP ProtectTools. |
| | All 802.11 integrated wireless LAN options | Wi-Fi Certified*<br>Cisco Compatible Extensions support |

*Standard Features (availability may vary by country)*

| | |
|---|---|
| | Wired Equivalent Privacy (WEP) support up to 128-bit keys<br>Wi-Fi Protected Access (WPA) and WPA2 support<br>802.1x authentication support, including EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, and LEAP<br>Advanced Encryption Standard (AES) support<br>Dual antennas integrated in the display enclosure |
| Intel Centrino Ultimate-N 6300 (3x3) | Integrated support for 802.11a, b, g, and n*<br>3 transmit, 3 receive antennas<br>Up to 450 mbps data rate |
| Atheros HB112AGN 802.11a/b/g/n (3x3) WiFi Adapter | Integrated support for 802.11a, b, g, and n*<br>3 transmit, 3 receive antennas |
| HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology | Bluetooth Specification v2.1+EDR compliant<br>Works with a wide range of Bluetooth devices |

* In countries where 802.11n is not allowed, this capability is not enabled (802.11a/b/g only).

| | |
|---|---|
| Keyboard | The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard and a drain system that funnels fluid through a hole in the bottom of the notebook. This minimizes the risk of damage to sensitive components underneath. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, function keys, and 19.05 x 19.05 mm key pitch (center-to-center spacing). U.S. and International key layouts are available. Other features include hot keys for instant access to power conservation and brightness and a separate numeric keypad. |
| HP DuraKeys | HP DuraKeys is a clear coating applied over the notebook keyboard that helps protect the finish and the printed characters on the keys. |
| Optional Backlit Keyboard | The optional backlit keyboard for low light environments is toggled on and off with the Fn+F12 function key. |
| Launch Buttons and Function Keys | Separate launch buttons provide easy access to the following features: wireless on/off, volume mute, HP QuickWeb, and calculator launch button. Function keys provide control of the following features: standby mode, external display, volume down, volume up, HP Power Assistant, and display brightness. |
| Pointing device | Touchpad with on/off button (double-tap to activate/de-activate), two-way scroll, gestures, three pick buttons<br>Pointstick with three additional pointstick buttons |

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| Internal Storage | | |
| Primary Storage Bay | Hard drives | 320/500/750 GB 7200 rpm SMART SATA II<br>320 GB 7200 rpm SMART SATA II Self Encrypting Drive |
| | Solid State Drive | 128/256 GB |
| Optional Second Primary Storage Bay | Hard drives | 320/500/750 GB 7200 rpm SMART SATA II<br>320 GB 7200 rpm SMART SATA II Self Encrypting Drive |
| | Solid State Drive | 128/256 GB |
| | NOTE: The hard drives are customer removable and will withstand multiple insertion/removal cycles. Up to 15 GB is reserved for the system recovery software. | |
| | HP 3D DriveGuard (Windows only) | The hard drives are mounted directly to the notebook frame, reducing the transmission of shock to the hard drive. Uses three-axis digital motion detection with intelligent sensitivity to help protect the hard drive during normal use from shock and vibration. The digital accelerometer temporarily halts all data transfer and parks the hard drive when abrupt motion is detected. |
| Upgrade Bay | Fixed 12.7 mm SATA optical drive | Blu-ray R/RE DVD+/-RW SuperMulti DL Drive<br>DVD+/-RW SuperMulti DL Drive<br>DVD-ROM Drive |
| | Additional hard drive | 500 GB 7200 rpm SMART SATA II Hard Drive |
| RAID Support | With two hard drives | RAID 0 Striping<br>RAID 1 Mirroring |
| | With three hard drives | RAID 5 Block-level striping with parity data |
| Expansion card slots | ExpressCard/54 slot | Supports ExpressCard/54 and ExpressCard/34 |
| | Integrated Smart Card Reader | Compatible with ISO 7816 compliant Smart Cards<br>PC/SC interface support |
| | Secure Digital/MMC slot | Supports SD (Secure Digital), MMC (MultiMedia Card) |

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| Interfaces | External monitor | Two – (1) DisplayPort, (1) VGA |
| | 1394a | One |
| | Stereo microphone in | One |
| | Stereo headphone/line out | One |
| | Power connector | One |
| | RJ-11/modem | One |
| | RJ-45/Ethernet | One |
| | USB 3.0 | Two |
| | USB 2.0 | Two (includes one charging port) |
| | eSATA/USB 2.0 combo | One |
| | Docking connector | One |
| | Secondary battery connector | One |

Audio/Visual

SRS Premium Sound™
Integrated stereo speakers
Dual-microphone array
Button for volume mute; function keys for volume up and down
Stereo headphone/line out
Stereo microphone/line in

Optional 720p HD webcam

- HD format (widescreen)
- Supports videoconferencing and still image capture
- High quality fixed focus lens
- Video capture at various resolutions up to 1280x720 resolution (720p) and up to 30fps
- M-JPEG compression supports higher frame rates for video capture and videoconferencing
- Improved low light sensitivity
- Improved dynamic range

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| Software | Preinstalled software with Windows operating system | HP Performance Advisor<br>HP Mobile Display Assistant (with HP DreamColor Technology)<br>HP Recovery Manager<br>HP Support Assistant<br>HP ProtectTools Security Manager<br>HP ProtectTools for Central Management<br>HP Hotkey Support<br>HP QuickWeb<br>HP Power Assistant<br>HP Connection Manager<br>HP DayStarter<br>Microsoft Office 2010 preloaded (purchase of a Product Key required to activate a full Office 2010 suite)*<br>Norton Internet Security 2011**<br>PDF Complete Special Edition***<br>Intervideo WinDVD - DVD Player (select models)<br>Roxio Burn Secure (select models)<br>Roxio MyDVD 10 SE (select models)<br>HP Webcam Software (select models)<br>Skype |
| | Additional software available from the web | HP SoftPaq Download Manager<br>HP Client Manager Software<br>HP Client Configuration Management Agent |

* Microsoft Office 2010 Preloaded includes reduced functionality versions of Word and Excel. Purchase of Product Key required to activate full Office 2010 suite available at participating resellers/retailers and http://www.office.com.
** Norton Internet Security 2011 includes 60 days of complimentary live updates; subscription required for live updates thereafter. Internet access required to receive updates.
*** PDF Complete Special Edition 60 day trial; purchase license afterwards for full functionality.

| | | |
|---|---|---|
| Planned Workstation ISV Certifications | MCAD (Mechanical CAD/Architectural Engineering and Construction) | Autodesk AutoCAD<br>Autodesk AutoCAD Mechanical<br>Autodesk AutoCAD Electrical<br>Autodesk Inventor<br>Autodesk AutoCAD Architecture<br>Autodesk AutoCAD Plant3D<br>Autodesk AutoCAD P&ID<br>Autodesk AutoCAD Structural Detailing<br>Autodesk Alias Automotive<br>Autodesk Alias Design<br>Autodesk Alias Surface<br>Autodesk AutoCAD MEP<br>Autodesk AutoCAD Raster Design<br>Autodesk Showcase<br>Autodesk Moldflow<br>Aveva PDMS & Marine<br>Bentley InRoads XM<br>Bentley Microstation<br>Bentley Navigator<br>PTC Creo Elements Direct |

*Standard Features (availability may vary by country)*

| | |
|---|---|
| | Dassault Systemes CATIA V5, V6<br>DS Solidworks<br>ICEM Surf<br>MSC Software MSC.Patran<br>MSC Software SimXpert<br>PTC Pro/ENGINEER Wildfire (Creo Elements Pro & Creo 1.0)<br>SensAble<br>Siemens PLMS NX<br>Siemens PLMS NX I-deas<br>Siemens PLMS Solid Edge<br>Siemens PLMS TeamCenter Visualization<br>Siemens Tecnomatix<br>HSMWorks |
| DCC<br>(Digital Content Creation) | Adobe Premiere<br>Adobe After effects<br>Adobe Encore<br>Adobe Photoshop<br>Autodesk 3DS MAX<br>Autodesk MotionBuilder<br>Autodesk Mudbox<br>Autodesk Maya<br>Autodesk SoftImage<br>Avid Media Composer<br>Avid Pro Tools |
| GIS<br>(Geographic Information Systems) /<br>Oil and Gas | ESRI ArcGIS<br>Paradigm GoCAD, SKUA<br>Schlumberger Petrel<br>SeismicMicro Technology Kingdom<br>Dynamic Graphics Inc. EarthVision, CoVis4D<br>Landmark Decision Space Desktop<br>Roxar RMS<br>Transform TearraSuite<br>Headwave Headwave2<br>ffA SVI Pro<br>Autodesk AutoCAD Map 3D |
| GIS<br>(Geographic Information Systems) /<br>Oil and Gas<br>(Linux if available) | Landmark Decision Space Desktop<br>Paradigm EPOS, GOCAD, SKUA<br>Schlumberger GeoFrame<br>Dynamic Graphics Inc. EarthVision<br>Roxar RMS<br>Transform TerraSuite<br>Headwave Headwave2 |
| AEC | Autodesk Navisworks Manage<br>Autodesk Navisworks Simulate<br>Autodesk Navisworks Review<br>Autodesk Revit Architecture<br>Autodesk Revit MEP<br>Autodesk Revit Structure<br>Autodesk AutoCAD Civil 3D |

*Standard Features (availability may vary by country)*

NOTE: This is a tentative list, and some certifications may only be completed on specific graphics solutions.

| | | | |
|---|---|---|---|
| HP Performance Advisor | HP Performance Advisor enables optimal configuration of HP Mobile Workstations delivering stability and best performance. HP Performance Advisor will guide your system setup allowing a "custom" configuration that best matches the workstation to user requirements. | | |
| HP Recovery Manager | Models shipped with Windows 7 or Windows Vista include HP Recovery Manager. HP Recovery Manager enables fast recovery of the factory preinstalled image if the system becomes corrupted or if important system files are accidentally deleted. Up to 20 GB of the hard drive is reserved for the system recovery software. | | |
| Security | Standard Features | HP ProtectTools Security Manager (standard modules include)<br>• Credential Manager<br>• Computrace* Pro<br>• Device Access Manager<br>• Drive Encryption<br>• Face Recognition (webcam configurations only)<br>• File Sanitizer<br>• Privacy Manager<br>• Embedded Security<br><br>HP Fingerprint Sensor<br>Integrated Smart Card Reader<br>Enhanced Pre-Boot Security (Multiuser / Multifactor)<br>HP SpareKey<br>One-Step Logon<br>TPM 1.2 Embedded Security Chip**<br>HP Disk Sanitizer<br>Security lock slot<br>Security screw for bottom access door<br>Support for Intel AT*** | |
| | Optional Features | HP Privacy Filter | Narrows viewing area so that screen data is visible only to persons directly in front of the monitor. |
| | | Computrace** Pro for HP ProtectTools with GPS Tracking | Subscription based security solution providing the ability to track, initiate physical recovery, conduct asset management, and perform remote data delete by utilizing GPS technology. GPS functionality requires HP Mobile Broadband Module. |

* The Computrace agent is shipped turned off, and must be activated by customers when they purchase a subscription with terms ranging from one to five years.
** TPM module disabled where use is restricted by law, for example, Russia and China.
For more information on HP security solutions refer to: http://www.hp.com/products/security.
*** Intel AT security requires a separately purchased Absolute Computrace service subscription and must be activated and configured. Check with Absolute for availability in your country. Intel and HP assume

no liability for lost or stolen data and/or systems or any other damages resulting therefrom. See http://www.intel.com/technology/anti-theft/

**HP ProtectTools Security Manager with Central Management**

HP ProtectTools Security Manager is the security platform for business notebooks and desktops. The HP ProtectTools Security Manager is an extensible client security console that delivers enhanced security capabilities through add-on software modules. The ProtectTools modules are available on the hard drive (also downloadable from the web) and can be configured in Software Setup.

HP ProtectTools is centrally manageable with the capability to manage notebooks from a single point. HP ProtectTools is management ready out of the box, in partnership with Digital Persona. Features address requirements that customers expect from a centrally managed security solution such as user provisioning, credential reset, and credential revocation.

HP ProtectTools provides two separate management solutions, targeted at the enterprise and the SMB:

- Digital Persona Pro AD: Designed for the enterprise customer. Integrates with Active Directory and gives IT Managers the ability to provision users, create login policies based on passwords, biometrics or smartcards. Management features also include remote credential recovery in case the user forgets the password, loses the smartcard or cannot use the fingerprint reader for any reason. In addition, advanced auditing capabilities are also built in. Digital Persona Pro AD is available now.
- Digital Persona Pro Workgroup: Designed for the small business customer. Provides features similar to the Active Directory version, but for workgroups. Workgroup activation is built into HP ProtectTools, and activation of up to 5 seats is completely free.

For more information on Central Management for HP ProtectTools, refer to: http://www.hp.com/products/security.

**Power Supply**

External HP 200W Smart AC adapter
Slim (172 x 96 x 25.4mm); Standard (170 x 85 x 35mm)

External HP Slim 230W Smart AC adapter (200 x 100 x 25.4 mm);
Power cord included is 6-foot (1.8 meter).
Total length including external AC adapter is 12 feet (3.66 meter).

**Battery**

| | |
|---|---|
| Primary battery | HP 8-cell (83 WHr) Li-Ion battery<br>HP Long Life 8-cell (75 WHr) Li-Ion battery (3-yr warranty) |
| Secondary battery Options | HP BB09 Ultra Extended Life Notebook Battery (9-cell 100 WHr)<br>HP ST09 Extended Life Notebook Battery (9-cell 73 WHr) |

*Standard Features (availability may vary by country)*

| | | |
|---|---|---|
| **Battery Life** | 8-cell (83 WHr) | Up to 4 hours and 30 minutes |
| | with optional HP ST09 Extended Life Notebook Battery | Up to TBD hours and TBD minutes |
| | with optional HP BB09 Ultra Extended Life Notebook Battery | Up to TBD hours and TBD minutes |

NOTE: Battery life will vary depending on the product model, configuration, loaded applications, features, use, wireless functionality and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See MobileMark07 battery benchmark www.bapco.com/products/mobilemark2007 for additional details.

**System Standby Time** Up to 1 week

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**Power Conservation**

AMD PowerPlay technology
NVIDIA PowerMizer technology
Hibernation
Standby
ACPI compliance

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**Docking and Stands**

HP 230W Docking Station
HP 230W Advanced Docking Station
HP USB 2.0 Docking Station
HP Essential USB 2.0 Port Replicator
HP LAN and USB Travel Hub

NOTE: Some HP Docking stations may not support every feature of some HP Notebook models. Please refer to the individual docking station documentation for specific information about supported features.

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**Service and Support**

HP Services offers limited 3-year warranty options depending on country. On-site service and warranty upgrades are also available. HP Care Pack Services extend service contracts beyond the standard warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at: http://www.hp.com/hps/carepack.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp.

*Options (availability may vary by country)*

NOTE: Options/capabilities listed in the QuickSpecs represent those capabilities available through Base Units or Build to Order configurations. The various product features and capabilities will vary in terms of configurable vs. aftermarket options (AMOs). There may be options and capabilities available through CTO that are not available as AMOs.

| | | |
|---|---|---|
| Memory | HP 2 GB (DDR3 1333 MHz) SODIMM | AT912AA#xxx |
| | HP 4 GB (DDR3 1333 MHz) SODIMM | AT913AA#xxx |
| | HP 8 GB (DDR3 1333 MHz) SODIMM | QP013AA#xxx |
| Storage | HP 250 GB Pocket Media Drive | FE477AA |
| | HP Mobile USB DVD | XQ543AA |
| | HP Mobile USB DVDRW | BU516AA |
| | HP Upgrade Bay SATA 500 GB 7200 rpm Hard Drive | LX733AA#xxx |
| | HP Primary SATA 500 GB 7200 rpm Hard Drive | AU098AA#xxx |
| | HP Upgrade Bay DL DVD+/-RW | LZ835AA |
| Expansion Solutions | HP 230W Docking Station | VB043AA#xxx |
| | HP 230W Advanced Docking Station | NZ223AA#xxx |
| | HP USB 2.0 Docking Station | AY052AA#xxx |
| | HP Essential USB 2.0 Port Replicator | AQ731AA#xxx |
| | HP LAN and USB Travel Hub | BM868AA#xxx |
| | HP Display & Notebook Stand | AW662AA#xxx |
| | HP Adjustable Display Stand | AW663AA#xxx |
| | HP Adjustable Dual Display Stand | AW664AA#xxx |
| Power | HP ST09 Extended Life Notebook Battery | QK639AA |
| | HP BB09 Ultra Extended Life Notebook Battery | QK640AA |
| | HP VH08XL Long Life Notebook Battery | TBD |
| | HP 200W Smart AC Adapter | TBD |
| | HP 230W Slim AC Adapter | TBD |
| Carrying Cases | HP Professional Slim Top Load Case | AY530AA |
| Security | HP Notebook Combo Lock | AY475AA#xxx |
| | HP Keyed Cable Lock | BV411AA |
| | HP 17.3-inch Display Privacy Filter | AU650AA#xxx |

*Options (availability may vary by country)*

| | | |
|---|---|---|
| Input/Output Devices | HP USB Optical Travel Mouse | RH304AA |
| | HP USB/PS2 Optical 2-Button Scroll Mouse | DC369A |
| | HP USB Keyboard & Mouse Bundle | RC465AA#xxx |
| | HP Notebook Projection Companion | AX325AA#xxx |

| | | | |
|---|---|---|---|
| System Unit | **Dimensions** (HxWxD) | 1.47 in (at front)/1.68 in (at rear) x 16.4 in x 10.7 in<br>37.4 mm (at front)/42.7 mm (at rear) x 416.5 mm x 272.7 mm | |
| | **Weight** | Starting at 7.66 lb (3.47 kg) with SSD and no optical drive<br>Starting at 7.96 lb (3.60 kg) with hard drive and DVD-ROM drive | |
| | NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Weight includes 8-cell battery and WLAN. | | |
| | **Stand-Alone Power Requirements** (AC Power) | Nominal Operating Voltage | 19.5 V |
| | | Average Operating Power | 45 W |
| | | Max Operating Power | < 200 W<br>or<br>< 230 W |
| | **Temperature** | Operating | 32° to 95° F (0° to 35° C) (not writing optical)<br>41° to 95° F (5° to 35° C) (writing optical) |
| | | Non-operating | –4° to 140° F (–20° to 60° C) |
| | **Relative Humidity** | Operating | 10% to 90%, non-condensing |
| | | Non-operating | 5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature |
| | **Shock** | Operating | 125 G, 2 ms, half-sine |
| | | Non-operating | 200 G, 2 ms, half-sine |
| | **Random Vibration** | Operating | 0.75 grms |
| | | Non-operating | 1.50 grms |
| | **Altitude** (unpressurized) | Operating | –50 to 10,000 ft (–15.24 to 3,048 m) |
| | | Non-operating | –50 to 40,000 ft (–15.24 to 12,192 m) |
| | **Planned Industry Standard Certifications** | UL | Yes |
| | | CSA | Yes |
| | | FCC Compliance | Yes |
| | | ENERGY STAR® | Select models* |
| | | EPEAT | Gold target** |
| | | ICES | Yes |
| | | Australia / NZ A-Tick Compliance | Yes |
| | | CCC | Yes |
| | | Japan VCCI Compliance | Yes |
| | | KCC | Yes |
| | | BSMI | Yes |
| | | CE Marking Compliance | Yes |

* Configurations of the HP EliteBook 8760w that are ENERGY STAR qualified are identified as HP EliteBook 8760w ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT Registered TBD in U.S. EPEAT registration varies by country. See www.epeat.net for registration status by country.

NOTE: For accessibility information on HP products, please visit: http://www.hp.com/accessibility.

| | | |
|---|---|---|
| Audio | SRS Premium Sound | |
| Hardware | Implementation | IDT 92HD87 High Definition CODEC |
| | Touch-Sensitive Volume Controls | Volume up, volume down, and mute |
| | Full Duplex | Yes |
| | Microphone In | Stereo |
| | Headphone/Line Out | Stereo |
| | Integrated Microphone | Yes, dual digital microphone array when equipped with optional webcam |
| Audio Output Quality | Frequency Response | 20 Hz – 20 kHz |
| | Signal to Noise Ratio | >85 dB |
| | Total Harmonic Distortion | 0.01% |
| | Noise Floor | –110 dB |
| | Play/Record Sampling Rate(s) | 8 kHz – 48kHz |
| | DAC | 16, 20 or 24-bit |
| | ADC | 16 or 20-bit |
| Integrated Stereo Speakers | Power Rating | 2 Watts |
| | Impedance | 4 Ohms |
| Power | | |

*Technical Specifications*

| | | | |
|---|---|---|---|
| HP 230W Slim Smart AC Adapter | Dimensions | 7.87 x 3.94 x 1.57 in (20.0 x 10.0 x 4.0 cm) | |
| | Weight | 2.87 lb (1300 g) | |
| | Input | 100 to 240 VAC | |
| | | Input Efficiency | 87% min at 115 VAC |
| | | Input frequency range | 47 to 63 Hz |
| | | Input AC current | 3.5 A at 90 VAC, 1.75 A at 180 VAC |
| | Output | Output power | 230W |
| | | DC output | 19.5V |
| | | Hold-up time | 5 msec at 115 VAC input |
| | | Output current limit | <18A, Over voltage protection- 29V max automatic shutdown |
| | Connector | 3 pin/grounded, mates with interchangeable cords | |
| | Environmental Design | Operating temperature | 32° to 104° F (0° to 35° C) |
| | | Non-operating (storage) temperature | -4° to 149° F (-20° to 65° C) |
| | | Altitude | 0 to 10,000 ft (0 to 3,048 m) |
| | | Humidity | 20% to 80% |
| | | Storage Humidity | 10% to 90% |
| | EMI and Safety Certifications | CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition. | |

| | | | |
|---|---|---|---|
| HP 200W Slim Smart AC Adapter | Dimensions | 6.69 x 3.35 x 1.38 in (17.0 x 8.5 x 3.5 cm) | |
| | Weight | 2.03 lb (920 g) | |
| | Input | 100 to 240 VAC | |
| | | Input Efficiency | 87% min at 115 VAC |
| | | Input frequency range | 47 to 63 Hz |
| | | Input AC current | 2.9 A at 90 VAC, 1.45 A at 180 VAC |
| | Output | Output power | 200W |
| | | DC output | 19.5V |
| | | Hold-up time | 5 msec at 115 VAC input |
| | | Output current limit | <16A, Over voltage protection- 29V max automatic shutdown |
| | Connector | 3 pin/grounded, mates with interchangeable cords | |
| | Environmental Design | Operating temperature | 32° to 104° F (0° to 35° C) |
| | | Non-operating (storage) temperature | -4° to 149° F (-20° to 65° C) |
| | | Altitude | 0 to 10,000 ft (0 to 3,048 m) |
| | | Humidity | 20% to 80% |
| | | Storage Humidity | 10% to 90% |

| | | |
|---|---|---|
| EMI and Safety Certifications | CE Mark- full compliance with LVD and EMC directives; Worldwide safety standards- IEC950, EN60950, UL1950, Class 1, SELV; Agency approvals- C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCIB, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition. | |

NOTE: Unless otherwise noted, temperature limits listed in the following component specifications relate to the internal temperatures of these components and not to the environment in which the PC is operating.

| | | | |
|---|---|---|---|
| Optional HP BB09 Ultra Extended Life Notebook Battery | Dimensions (H x W x L) | 1.2 x 5.9 x 11.4 in (3x15x29cm) | |
| | Weight (max) | 1.5lb, (.682kg) | |
| | Cells/Type | Lithium-Ion | |
| | Energy | Voltage | 11.25V |
| | | Amp-hour capacity | 8.85Ah |
| | | Watt-hour capacity | 100Wh |
| | Temperature | Operating (Charging) | 32° to 113° F (0° to 45° C) |
| | | Operating (Discharging) | 14° to 122° F(-10° to 50° C) |
| | | Non-operating | -4° to 122° F (-20° to 50° C) |
| | Battery Re-Charge Time | System in OFF or Standby Mode | 3.5 to 5 hours |
| | | System ON | 4 to 7 hours |
| | Fuel Gauge LED | Yes | |
| | Warranty | 1 year | |
| | Optional Travel Battery Available | NA | |

| | | | |
|---|---|---|---|
| Optional HP ST09 Extended Life Notebook Battery | Dimensions (H x W x L) | 1.2 x 6.1 x 12 in (3x15.5x30.5cm) | |
| | Weight (max) | 1.2lb, (.550kg) | |
| | Cells/Type | Lithium-Ion Polymer | |
| | Energy | Voltage | 11.1V |
| | | Amp-hour capacity | 6.6Ah |
| | | Watt-hour capacity | 73Wh |
| | Temperature | Operating (Charging) | 32° to 113° F (0° to 45° C) |
| | | Operating (Discharging) | 14° to 122° F(-10° to 50° C) |
| | | Non-operating | -4° to 122° F (-20° to 50° C) |
| | Battery Re-Charge Time | System in OFF or Standby Mode | 3.5 to 5 hours |
| | | System ON | 4 to 7 hours |
| | Fuel Gauge LED | Yes | |
| | Warranty | 1 year | |
| | Optional Travel Battery Available | NA | |

## Displays

| | | | |
|---|---|---|---|
| 17.3-inch LED HD+ WVA anti-glare | Active Area (W x H) | 15.0 x 8.5 in (38.2 x 21.5 cm) | |
| | Diagonal Size | 17.3 in (43.9 cm) | |
| | Surface Treatment | Anti-glare | |
| | Contrast Ratio | 300:1 (min) | |
| | Refresh Rate | 60 Hz | |
| | Brightness | 200 nit typical | |
| | Pixel Resolution | Pitch | 0.23868 x 0.23868 mm |
| | | Format | 1600 x 900 |
| | | Configuration | RGB Stipe |
| | Backlight | LED | |
| | PPI | 107 | |
| | Viewing Angle | ±60° Horizontal, ±50° Vertical (minimum)<br>60/60/50/50 (Left/Right/Down/Up) (minimum) | |

| | | | |
|---|---|---|---|
| 17.3-inch FHD WVA LED anti-glare | Active Area (W x H) | 15.0 x 8.5 in (38.2 x 21.5 cm) | |
| | Diagonal Size | 17.3 in (43.9 cm) | |
| | Surface Treatment | Anti-glare | |
| | Contrast Ratio | 300:1 (min) | |
| | Refresh Rate | 60 Hz | |
| | Brightness | 200 nit typical | |
| | Pixel Resolution | Pitch | 0.1989 X 0.1989 mm |
| | | Format | 1920x1080 |
| | | Configuration | RGB Stipe |
| | Backlight | LED | |
| | PPI | 127 | |
| | Viewing Angle | ±60° Horizontal, ±50° Vertical (minimum)<br>60/60/50/50 (Left/Right/Down/Up) (minimum) | |

*Technical Specifications*

| | | | | |
|---|---|---|---|---|
| 17.3-inch FHD UWVA LED anti-glare Dreamcolor | Active Area (W x H) | 15.0 x 8.5 in (38.2 x 21.5 cm) | | |
| | Diagonal Size | 17.3 in (43.9 cm) | | |
| | Surface Treatment | Anti-glare | | |
| | Contrast Ratio | 600:1 (min) | | |
| | Refresh Rate | 60 Hz | | |
| | Brightness | 300 nit typical | | |
| | Pixel Resolution | Pitch | 0.1989 X 0.1989 mm | |
| | | Format | 1920x1080 | |
| | | Configuration | RGB Stipe | |
| | Backlight | LED | | |
| | PPI | 127 | | |
| | Viewing Angle | ±160° Horizontal, ±160° Vertical (minimum)<br>80/80/80/80 (Left/Right/Down/Up) (min) | | |
| | Technology Type | 30-bit In-Plane Switching (IPS) | | |
| | Color Depth | 10-bits/color | | |
| | Display Colors | Over 1 billion colors (native mode) | | |
| | Color Gamut Coverage | | CIE1931 (x,y) | CIE 1976 (u',v') |
| | | NTSC | 109% | 129% |
| | | AdobeRGB | 114% | 127% |
| | | sRGB | 154% | 148% |

Internal Storage

| | | | |
|---|---|---|---|
| 750 GB 7200 rpm SATA Hard Drive | Drive Weight | 0.25 lbs (115g) | |
| | Capacity | 750 GB | |
| | Height | 0.37 in (9.5 mm) | |
| | Width | 2.75 in (70 mm) | |
| | Interface | ATA-8, SATA 2.6, 3.0 Gb/s, NCQ | |
| | Transfer Rate | Synchronous (maximum) | 300 MB/s (Drive Capability) |
| | Seek Time (typical reads, including settling) | Single Track | 1.5 ms |
| | | Average | 11 ms |
| | | Maximum | 22 ms |
| | Rotational Speed | 7200 rpm | |
| | Logical Blocks | 1,465,149,168 | |
| | Operating Temperature | 32° to 140° F (0° to 60° C) [case temp] | |
| | Features | ATA Security | |

*Technical Specifications*

| | | | |
|---|---|---|---|
| 500 GB 7200 rpm SATA Hard Drive | Drive Weight | 0.25 lbs (115g) | |
| | Capacity | 500 GB | |
| | Height | 0.37 in (9.5 mm) | |
| | Width | 2.75 in (70 mm) | |
| | Interface | ATA-8, SATA 2.6, 3.0 Gb/s, NCQ | |
| | Transfer Rate | Synchronous (maximum) | 300 MB/s (Drive Capability) |
| | Seek Time (typical reads, including settling) | Single Track | 1.5 ms |
| | | Average | 11 ms |
| | | Maximum | 22 ms |
| | Rotational Speed | 7200 rpm | |
| | Logical Blocks | 976,773,168 | |
| | Operating Temperature | 32° to 140° F (0° to 60° C) [case temp] | |
| | Features | ATA Security | |
| 320 GB 7200 rpm SATA Hard Drive | Drive Weight | 0.25 lbs (115 g) | |
| | Capacity | 320 GB | |
| | Height | 0.37 in (9.5 mm) | |
| | Width | 2.75 in (70 mm) | |
| | Interface | ATA-8, SATA 2.6, 3.0 Gb/s, NCQ | |
| | Transfer Rate | Synchronous (maximum) | 300 MB/s (Drive Capability) |
| | Seek Time (typical reads, including settling) | Single Track | 1.5 ms |
| | | Average | 11 ms |
| | | Maximum | 22 ms |
| | Rotational Speed | 7200 rpm | |
| | Logical Blocks | 625,142,448 | |
| | Operating Temperature | 32° to 140° F (0° to 60° C) [case temp] | |
| | Features | ATA Security | |
| 128 GB 2.5-inch SATA Solid State Drive | Drive Weight | 75 Grams | |
| | Capacity | 128 GB | |
| | Height | 0.276 in (7 mm) | |
| | Width | 2.76 in (70 mm) | |
| | Interface | SATA Gen 2 | |
| | Performance | Maximum Sequential Read | Maximum Sequential Write |
| | | 250 MB/s | 140 MB/s |
| | Logical Blocks | 250,069,680 | |
| | Operating Temperature | 32° to 158°F (0° to 70°C) [case temp] | |
| | Features | ATA Security; ATA-7; SATA 2.6; DIPM; TRIM | |

## Optical Drives

| | | | |
|---|---|---|---|
| DVD-ROM Drive | Access Times | Random | < 140 ms CD (typical)<br>< 160 ms DVD (typical) |
| | Max Data Transfer Rate | 24X CD-ROM<br>8X-DVD | |
| | Transfer Mode | UDMA Mode 5 | |
| | Interface | Gen 1 SATA | |
| | Supported Media (read) | CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM | |
| | Supported Media (write) | None | |
| | Max Media Capacity (read) | 8.5GB | |
| | Transport | Tray Loading | |

| | | | |
|---|---|---|---|
| DVD+/-RW SuperMulti DL Drive | Access Times | Random | <140ms CD (typical)<br>< 160 ms DVD (typical) |
| | Max Data Transfer Rate | 24X CD-ROM<br>8X DVD<br>24X CD-R<br>24X CD-RW<br>8X DVD+R<br>8X DVD+RW<br>8X DVD-R<br>6X DVD-RW<br>6X - DVD+R Dual Layer<br>6X - DVD-R Dual Layer<br>5X DVD-RAM | |
| | Transfer Mode | UDMA Mode 5 | |
| | Interface | Gen 1 SATA | |
| | Supported Media (read) | CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM | |
| | Supported Media (write) | CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM, DVD+R DL, DVD-R DL | |
| | Max Media Capacity (read) | 8.5 GB | |
| | Max Media Capacity (write) | 8.5 GB | |

| | | | |
|---|---|---|---|
| | Transport | Tray Loading | |
| Blu-ray R/RE DVD+/-RW SuperMulti DL Drive | Access Times | Random | <165 ms CD-ROM (typical)<br><185 ms DVD-ROM (typical)<br><205 ms BD-ROM (typical) |
| | Max Data Transfer Rate | 24X CD-ROM<br>8X DVD-ROM<br>24X CD-R<br>16X CD-RW<br>8X DVD+R<br>8X DVD+RW<br>8X DVD-R<br>6X DVD-RW<br>6X DVD+R Dual Layer<br>6X DVD-R Dual Layer<br>5X DVD-RAM<br>6X BD-ROM<br>6X BD-R<br>2X BD-RE | |
| | Transfer Mode | UDMA Mode 5 | |
| | Interface | Gen 1 SATA | |
| | Supported Media (read) | CD-DA, , CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW. DVD-RAM, BD-ROM, BD-R, BD-RE | |
| | Supported Media (write) | CD-R, CD-RW, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, DVD-RAM, BD-R, BD-RE | |
| | Max Media Capacity (read) | 50.0 GB | |
| | Max Media Capacity (write) | 50.0 GB | |
| | Transport | Tray Loading | |
| Security | | | |

| | | |
|---|---|---|
| HP Fingerprint Sensor | Mobile Voltage Operation | 3.0V-3.6V Single Supply |
| | Operating Temperature | 32° – 158°F (0° – 70°C) |
| | Current Consumption @ 3.3V | Less than 70 mA peak imaging and scrolling<br>Less than 25 mA hardware finger detection<br>Advanced Power Management |
| | High-Rate Image Capture | Up to 240 image frames /sec |
| | ESD Resistance | IEC 61000-4-2 Level 4 (±15KV) |
| | Detection Matrix | 192 x 16 Pixels<br>9.7 mm x 0.81 mm<br>500 ppi High-Resolution Images |

Communications

| | | |
|---|---|---|
| Intel® 82579LM Gigabit Network Connection | Ethernet Features | 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<br>100 10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14)<br>100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)<br>1000 Mbti/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023. Clauses 40)<br>Auto-Negotiation (Automatic Speed Selection)<br>Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s<br>IEEE 802.1p QoS (Quality of Service) Support<br>IEEE 802.1q VLAN support<br>IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable)<br>IEEE 802.3az EEE(Energy Efficient Ethernet)<br>Jumbo Frame 9K<br>Auto MDI/MDIX Crossover cable detection |
| | Power Management | ACPI compliant - multiple power modes<br>Energy Detect Low Power Mode(Green Ethernet) |
| | Performance Features | TCP/IP/UDP Checksum Offload (configurable)<br>Protocol Offload( ARP & NS)<br>Large send offload and Giant send offload<br>Receiving Side Scaling<br>MACSec Offload (802.3ae)<br>Intel vPro<br>iSCSI Boot |
| | Manageability | Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only)<br>PXE 2.1 Remote Boot<br>Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30))<br>Comprehensive diagnostic and configuration software suite<br>Virtual Cable Doctor for Ethernet cable status |

| | | |
|---|---|---|
| | Interface | PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ.<br>NOTE: Intel 82579 PCIe interface is not PCIe compliant. It operates at half of PCIe specification V1.1 (2.5GT/S) speed. |
| | NIC Device Driver Name | Intel 82579LM/82579V Ethernet Network Connection |
| V.92 56K Data/Fax Modem | Form Factor | MDC 1.5 Daughtercard |
| | Power Management Support | APM Revision 1.2, ACPI |
| | Approvals/ Certifications | UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries |
| | Data Mode Capabilities | V.92 data<br>V.8bis<br>V.80<br>V44, V.42bis, MNP5 (Compression)<br>V.42 (LAPM, MNP2-4) (Error Correction)<br>Optional symbol rates:<br>2800, 3429<br>Asymmetric Symbol rates<br>Synchronous primary channel data signaling rates:<br>3600, 31200<br>Automatic rate re-negotiation<br>V.34<br>V.32bis<br>V.32<br>V.23<br>V.22bis<br>V.22<br>V.21<br>Bell 212A<br>Bell 103J |
| | Fax Mode Capabilities | TIA/EIA-578-B (Class 1)<br>T.30, T.4 (Group 3)<br>V.17<br>V.29<br>V.27ter<br>V.21 Channel 2 |
| | Command Set | V.250 (Partial)<br>TIA-602<br>Identification: +GMI, +GMM, +GMR<br>Port control: +IPR, +ICF, +IFC, +ILRR<br>Modulation: +MS, +MR, +MA<br>Error control: +ES, +ER, +EB, +ESR, +ETBM<br>Data compression: +DS, +DR<br>V.251 |

*Technical Specifications*

| | | |
|---|---|---|
| HP un2430 EV-DO/HSPA Mobile Broadband Module | Technology/Operating Bands | GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS)<br>UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), AWS (UTRA FDD Band IV), 900MHz(UTRA FDD Band VIII), 850MHz (UTRA FDD Band V)<br>1xEVDO/1xRTT with receive diversity: 850MHz (Band Class0-Cell), 1900MHz (Band Class1-PCS) |
| | Wireless Protocol Standards | GSM/GPRS/EDGE: Class A, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9.<br>UMTS/WCDMA: Release 99 and Release 6<br>CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856, IS-2000 |
| | Wireless Parametric Standards | Meets or exceeds TIA/EIA IS-98-D |
| | Maximum Data Rates | UMTS (HSPA) - 14.4 Mbps (Download ), 5.76Mbps (Upload)<br>CDMA (EVDO Release A) - 3.1 Mbps (Download), 1.8Mbps (Upload) |
| | GPS | Standalone GPS enabled<br>gpsOneXTRATM™ |
| | GPS Bands | L1 - 1575.42 MHz |
| | Maximum Output Power | GSM/GPRS/EDGE: 32dBm (+/-1)<br>WCDMA: 24dBm (+0.7/-2.3)<br>CDMA: 24dBm (+0.7/-2) |
| | Maximum Power Consumption | 2750mA (peak); 1100mA (average) |
| | Power Consumption, Idle Not Connected | 20 mA |
| | Power Management | USB selective suspend<br>Integrated notebook wireless button |
| | Antenna Type | Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure |
| | Form Factor | PCI-Express MiniCard, USB 2.0 interface |
| | Weight | 11.5 g |
| | Dimensions (Length x Width x Thickness) | 2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm) |
| | Voltage, Operating | 3.3v +/- 10% |
| | Temperature, Operating (from TIA/EIA/IS-98-D) | -22° to 158° F (-30° to 70° C) (full RF performance)<br>-22° to 167° F (-30° to 75° C) (reduced RF performance) |
| | Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108) | -40° to 185° F (-40° to 85° C) |
| | Humidity, Non-operating | 95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing) |
| | Configuration Utilities | HP Connection Manager |
| | LED Activity | LED Off - Radio Off;<br>Solid LED On - Radio On |
| HP hs2340 HSPA+ | Technology/Operating | GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), |

*Technical Specifications*

| | | |
|---|---|---|
| Mobile Broadband Module | Bands | 1900MHz (PCS)<br>UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900Mhz (UTRA FDD Band II), 900Mhz(UTRA FDD Band VIII), 850 MHz (UTRA FDD Band V) |
| | Wireless Protocol Standards | GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9.<br>UMTS/WCDMA: Release 99 and Release 7<br>Advanced Receiver Type 3i |
| | Wireless Parametric Standards | Complies with 3GPP specifications |
| | Maximum Data Rates | UMTS (HSPA) - 21 Mbps (Download ), 5.76Mbps (Upload) |
| | GPS | Standalone, A-GPS (Internet- and Network assisted) |
| | GPS Bands | 1575.42 MHz (± 1.023 MHz) |
| | Maximum Output Power | GSM/EDGE<br>GSM850 & GSM900 bands<br>GPRS: +33 dBm ± 2 dBm (class 4)<br>EGPRS: +27 dBm ± 3 dBm (class E2)<br><br>DCS1800 & PCS1900 bands<br>GPRS: +30 dBm ± 2 dBm (class 1)<br>EGPRS: +26 dBm +4 / -3 dBm (class E2)<br><br>UMTS<br>UTRA FDD Bands<br>+24 dBm +4 / -3 dBm (class 3) |
| | Maximum Power Consumption | 2000mA (peak); 600mA (average) |
| | Power Consumption, Sleep Mode | 5 mA |
| | Power Management | USB selective suspend<br>Integrated notebook wireless button |
| | Antenna Type | Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure |
| | Form Factor | PCI-Express MiniCard, USB 2.0 interface |
| | Weight | < 12 g |
| | Dimensions (Length x Width x Thickness) | 2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm) |
| | Voltage, Operating | 3.3v +/- 9% |
| | Temperature, Operating | 14° to 149° F (-10° to 65° C) (full RF performance)<br>14° to 167° F (-10° to 75° C) (reduced RF performance) |
| | Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108) | -22° to 185° F (-30° to 85° C) |
| | Humidity, Non-operating | 85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing) |
| | Configuration Utilities | HP Connection Manager |

| | | |
|---|---|---|
| | LED Activity | LED Off - Radio Off;<br>Solid LED On - Radio On |
| Intel Centrino Ultimate-N 6300 | Wireless LAN Standards | IEEE 802.11a<br>IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n*<br>* In countries where 802.11n is not allowed, this capability is not enabled. |
| | Interoperability | Wi-Fi certified (802.11bgn only)<br>Cisco Compatible Extensions Program compliant (802.11bgn only) with Microsoft Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN) |
| | Frequency Band | 2.4 GHz and 5GHz |
| | Antenna Structure | 3 transmit; 3 receive (3x3) |
| | Data Rates | 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11b: 1, 2, 5.5, 11 Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11n: many possible data rates, ranging from 6 Mbps to 450 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification |
| | Modulation | Direct Sequence Spread Spectrum<br>DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM |
| | Security[1] | Authentication: WPA and WPA2, 802.1x (EAP_TLS, TTLS, PEAP, LEAP, EAP-FAST)<br><br>Authentication Protocols: PAP, CHAP, TLS, GTC, MS-CHAP, MS-CHAPv2<br><br>Encryption: 64 and 128-bit WEP, AES-CCMP, CKIP, TKIP<br><br>Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 4) with Microsoft Windows Vista and XP only. |
| | Sub-channels | Multinational support with frequency bands and channels compliant to local regulations. |
| | Media Access Protocol | CSMA/CA (Collision Avoidance) with ACK |
| | Network Architecture Models | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |
| | Roaming | IEEE 802.11 compliant roaming between Access Points |
| | Output Power (for CCK and OFDM)[2] | 17 dBm max |
| | Power Consumption | Transmit: 2.4 Watts (max, with three spatial streams)<br>Receive: 1.4 Watts (max with three spatial streams)<br>Idle mode[3]: 35 mW (average)<br>Radio off: 20 mW (max) |
| | Power Management | ACPI compliant power management<br>802.11 compliant power saving mode |
| | Receiver Sensitivity[4] | 54 Mbps: -76 dBm, 6 Mbps: -92 dBm |

| | | |
|---|---|---|
| Antenna Connections | 3 U.FL type connectors, 50 ohm nominal impedance | |
| Form Factor | PCI-Express Half-MiniCard | |
| Weight | 0.0075 lb (3.4 g) | |
| Dimensions | 0.12 x 1.06 x 1.18 in (3.1 x 26.8 x 30.0 mm) | |
| Operating Voltage | 3.3V +/- 9% | |
| Temperature | Operating | 32° to 176° F (0° to 80° C) |
| | Non-operating | -40° to 176° F (-40° to 80° C) |
| Humidity | Operating | 10% to 90% (non-condensing) |
| | Non-operating | 5% to 90% (non-condensing) |
| Altitude | Operating | 0 to 10,000 ft (3,048 m) |
| | Non-operating | 0 to 50,000 ft (15,240 m) |
| LED Activity | LED Off - Radio OFF; Solid LED On - Radio ON | |

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. In Power Save Polling mode and on battery power.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
5. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

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| | | |
|---|---|---|
| Atheros HB112AGN 802.11a/b/g/n 3x3 WiFi Adapter | Wireless LAN Standards | IEEE802.11a<br>IEEE 802.11b<br>IEEE 802.11g<br>IEEE 802.11n |
| | Interoperability | Wi-Fi certified |
| | Frequency Band | 2.4 GHz and 5GHz |
| | Data Rates | 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11b: 1, 2, 5.5, 11 Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>802.11n: many possible data rates, ranging from 6 Mbps to 450 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification |
| | Modulation | Direct Sequence Spread Spectrum<br>DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM |
| | Security[1] | Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. |
| | Sub-channels | Multinational support with frequency bands and channels compliant to local regulations. |
| | Media Access Protocol | CSMA/CA (Collision Avoidance) with ACK |
| | Network Architecture Models | Ad-hoc (Peer to Peer)<br>Infrastructure (Access Point Required) |
| | Roaming | IEEE 802.11 compliant roaming between access points |

| | | |
|---|---|---|
| **Output Power** (for CCK and OFDM)[2] | 17 dBm, nominal | |
| **Output Power** (for OFDM; power varies by data rate)[2] | 15 dBm, nominal | |
| **Power Consumption** | Transmit: 2.0 W (max)<br>Receive: 1.5 W (max)<br>Associated to Access Point, Idle: 300 mW nominal<br>Wireless Button Off: 75 mW nominal | |
| **Power Management** | ACPI compliant power management<br>802.11 compliant power saving mode | |
| **Receiver Sensitivity**[3] | 54 Mbps: -75 dBm, 11 Mbps: -88 dBm , 1 Mbps: -93 dBm | |
| **Antenna type** | High efficiency antenna with spatial diversity, mounted in the display enclosure | |
| **Form Factor** | PCI-Express Half-MiniCard | |
| **Weight** | 0.013 lb (6 g) | |
| **Dimensions** | 0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm) | |
| **Operating Voltage** | 3.3v +/- 9% | |
| **Temperature** | Operating<br>Non-operating | 14° to 149° F (-10° to 65° C)<br>-40° to 176° F (-40° to 80° C) |
| **Humidity** | Operating<br>Non-operating | 10% to 90% (non-condensing)<br>5% to 95% (non-condensing) |
| **Altitude** | Operating<br>Non-operating | 0 to 10,000 ft (3,048 m)<br>0 to 50,000 ft (15,240 m) |
| **LED Activity** | LED Off - Radio OFF; Solid LED On - Radio ON | |

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

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**HP Integrated Module with Bluetooth 2.1+EDR Wireless Technology**

| | |
|---|---|
| **Bluetooth Specification** | 2.1+EDR Compliant |
| **Dimensions** | 1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm) |
| **Frequency Band** | 2402 to 2480 MHz |
| **Number of Available Channels** | 79 (1 MHz) available channels |
| **Data Rates and Throughput** | 3 Mbps data rate; throughput up to 2.17 Mbps<br>Synchronous Connection Oriented links up to 3, 64 kbps, voice channels<br>Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric |
| **Transmit Power** | -6 dBm to 4 dBm (Bluetooth Class II) |
| **Receiver Sensitivity** | Better than -80 dBM at 0.1 % raw bit error rate |
| **Power Consumption** | Peak (Tx) 264 mW<br>Peak (Rx) 231 mW<br>Sleep <1 mW |

| | | |
|---|---|---|
| **Antenna** | Internally integrated within module | |
| **Range** | Up 33 ft (10 m) | |
| **Electrical Interface** | USB 2.0 compliant | |
| | Microsoft Windows Plug and Play compliant | |
| **Bluetooth Software Supported** | Broadcom Bluetooth for Windows | |
| | Microsoft Windows Bluetooth Software | |
| **Link Topology** | Point to Point, Multipoint Pico Nets up to 7 slaves | |
| **Security** | Full support of Bluetooth Security Provisions | |
| **Power Management** | Microsoft Windows ACPI, and USB Bus Support | |
| | Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff | |
| **Certifications** | All necessary regulatory approvals for supported countries, including: | |
| | FCC (47 CFR) Part 15C, Section 15.247 & 15.249 | |
| | ETS 300 328, ETS 300 826 | |
| | Low Voltage Directive IEC950 | |
| | UL, CSA, and CE Mark | |
| **Temperature** | Operating | -4° to 158° F (-20° to 70° C) |
| | Non-operating | -40° to 176° F (-40° to 80° C) |
| **Humidity** | Operating | 10% to 90% |
| | Non-operating | 5% to 95% |
| **Altitude** | Operating | 15,000 ft (4,572 m) |
| | Non-operating | 40,000 ft (12,192 m) |
| **Bluetooth Profiles Supported** | Serial Port Profile (SPP)[1] | |
| | Service Discovery Applicaton Profile (SDAP) | |
| | Dial-Up Networking (DUN)[1,2] | |
| | Generic Object Exchange Profile (GOEP)[1,2] | |
| | Object Push Profile (OPP)[1,2] | |
| | File Transfer Profile (FTP) | |
| | Synchronization Profile (SYNC) | |
| | Hard Copy Cable Replacement (HCRP)[1,2] | |
| | Personal Area Networking Profile (PAN)[1,2] | |
| | Human Interface Device Profile (HID)[1,2,3] | |
| | FAX Profile (FAX) | |
| | Basic Imaging Profile (BIP)[2] | |
| | Headset Profile (HSP) | |
| | Hands Free Profile (HFP) | |
| | Advanced Audio Distribution Profile (A2DP) | |

1. indicates the profile is supported by Microsoft Windows XP SP2
2. indicates the profile is part of Windows Vista

**Environmental Data**

**Eco-Label Certifications**

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- US ENERGY STAR®
- IT ECO declaration
- EPEAT – Gold where HP registers commercial notebook products. See http://www.epeat.net for registration status in your country.

**System Configuration**

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Convertible Mini tower Desktop model is based on a "Typically Configured Notebook"

| Energy Consumption | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 27.41 W | 27.61 W | 27.45 W |
| Sleep (Energy Star low power mode) | 1.09 W | 1.15 W | 1.11 W |
| Off | 0.44 W | 0.50 W | 0.44 W |

| Heat Dissipation* | 115 VAC | 230 VAC | 100 VAC |
|---|---|---|---|
| Normal Operation | 94 BTU/hr | 94 BTU/hr | 94 BTU/hr |
| Sleep | 4 BTU/hr | 4 BTU/hr | 4 BTU/hr |
| Off | 2 BTU/hr | 2 BTU/hr | 2 BTU/hr |

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

**Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)**

| System Fan Off | Sound Power (LWAd, bels) | Sound Pressure (LpAm, decibels) |
|---|---|---|
| Idle | 3.2 | 25 |
| Fixed Disk (random writes) | 3.6 | 27.9 |

System fan is usually off except when charging the battery

**Batteries**

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight

The battery type and chemistry used in the product is:
CR2032 (coin cell), Li-ion
6-cell high capacity Lithium-Ion battery (optional 8 cell available)

**Additional information**

This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and

Electronic Equipment (WEEE) Directive - 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post consumer recycled plastic (by wt.)

This product is greater than 95.1% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
  - Corrugated – 565 g
  - CANON bags – Several layers – 5 g
- Internal:
  - Polypropylene – 15 g
  - Molded Pulp – 240 g
- The Corrugated packaging material is made from 80% recycled content.
- The Canon bags – Several layers packaging material is made from 80% recycled content.
- The Polypropylene packaging material is made from 70% recycled content.
- The Molded Pulp packaging material is made from 70% recycled content

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment:

(http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 µgrams/cm2/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

**End-of-life Management and Recycling**

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

**Hewlett-Packard Corporate Environmental Information**

For more information about HP's commitment to the environment:
Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Environment website
http://www.hp.com/environment
Eco-label certifications
http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html
ISO 14001 certificates:
http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html

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